

Application No. 10/578,171
Amendment Dated: May 19, 2009
Reply to Office Action of: February 19, 2009

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended) An artificial tissue system, comprising:
(a) a biological matrix configured for ~~biological~~ contact with an outer surface of an implantable device, and
(b) a plurality of cells supported by said biological matrix, said cells promoting biocompatibility ~~a biological interaction~~ between said implantable device and a biological system.

Claim 2 (Original) The artificial tissue system of claim 1, wherein said cells include at least one member selected from the group consisting of biological cells, engineered cells, support cells, stem cells, artificial cells and hybrid cells.

Claim 3 (Canceled)

Claim 4 (Previously Presented) The artificial tissue system of claim 1, wherein said cells enhance the lifespan and/or the function of said implantable device.

Claims 5-8 (Previously Canceled)

Claim 9 (Currently Amended) The artificial tissue system of claim 1, wherein said biological system is ~~comprises~~ a mammal.

Claims 10-13 (Previously Canceled)

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Claim 14 (Previously Presented) The artificial tissue system of claim 1, wherein said implantable device is a sensor.

Claim 15 (Original) The artificial tissue system of claim 14, wherein said sensor is a glucose sensor.

Claim 16 (Currently Amended) The artificial tissue system of claim 1, wherein said biological matrix is configured to at least partially embed said implantable device.

Claims 17-18(Previously Canceled)

Claim 19 (Previously Presented) The artificial tissue system of claim 1, wherein said cells are configured to suppress deleterious reactions between said implantable device and said biological system and/or said artificial tissue system.

Claim 20 (Canceled)

Claims 21-24(Previously Canceled)

Claim 25 (Previously Presented) The artificial tissue system of claim 1, wherein said system further comprises a support system and/or a delivery system comprising a gel, a paste and/or a polymer.

Claim 26 (Previously Canceled)

Claim 27 (Currently Amended) An implant comprising an implantable device and in biological contact with the artificial tissue system of claim 1.

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Claim 28 (Currently Amended) An implant system comprising:

- (a) an implantable device,
- (b) a biological matrix in ~~biological~~ contact with an outer surface of said implantable device, and
- (~~c~~) a plurality of cells supported by said biological matrix, said cells promoting biocompatibility ~~a biological interaction~~ between said implantable device and a biological system.

Claims 29-36 (Previously Canceled)

Claim 37 (Currently Amended) An artificial implant system in biological contact with a biological system comprising:

- (a) a cellular component, said cellular component includes at least one cellular community which induces a biological response in the biological system;
- (b) a biological matrix material, said biological matrix material being associated with a portion of the cellular community; and
- (c) an implant device having an outer surface in contact with the biological matrix material, at least one of the biological matrix material and the cellular community increasing the lifespan of the implant device ~~a biological interface wherein said biological interface is associated with the matrix material and the biological system.~~

Claim 38 (Currently Amended) The artificial implant system in biological contact with a biological system of claim 37, wherein the lifespan of the implant device is increased by inducing ~~biological response includes~~ neovascularization of the biological system.

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Claim 39 (Previously Presented) The artificial implant system in biological contact with a biological system of claim 37, wherein the biological system is a mammal.

Claims 40-50(Previously Canceled)

Claim 51 (Currently Amended) The artificial tissue system of claim 1, wherein the biological matrix comprises a basement membrane gel.

Claim 52 (Currently Amended) The implant system of claim 28, wherein the biological matrix comprises a basement membrane gel.

Claim 53 (Previously Canceled)

Claim 54 (Previously Presented) The artificial implant system of claim 37, wherein the biological matrix material comprises a basement membrane gel.

Claims 55-58(Previously Canceled)

Claim 59 (Previously Presented) The artificial implant system of claim 37, wherein promotion of biocompatibility ~~the biological response~~ includes inhibition of at least one of inflammation and fibrosis.

Claims 60-65(Previously Canceled)

Claim 66 (Currently Amended) The ~~implant system of claim 1 28, wherein the system is further comprising a subsystem~~ configured to test the effectiveness of an implantable device ~~the artificial tissue system in extending the life of the implant.~~

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Claim 67 (Canceled)

Claim 68 (Currently Amended) The implant system of claim 28 ~~67~~, wherein the implantable device comprises a sensor.

Claim 69 (Currently Amended) The implant system of claim 68, wherein the biological matrix comprises a basement membrane gel.

Claim 70 (Previously Presented) The artificial tissue system of claim 1, wherein said cells induce the growth of biological tissue in and/or between said biological system and/or said artificial tissue system.

Claim 71 (Previously Presented) The artificial tissue system of claim 70, wherein said biological tissue comprises vascular structures.

Claim 72 (Previously Presented) The artificial tissue system of claim 1, wherein said artificial tissue system further comprises at least one genetic element supported by said matrix.

Claim 73 (Previously Presented) The artificial tissue system of claim 1, wherein said artificial tissue system further comprises at least one response modifier supported by said matrix.

Claim 74 (Currently Amended) The artificial implant system in biological contact with a biological system of claim 39 ~~37~~, wherein the lifespan of the implant device is increased by inducing ~~biological response includes~~ neovascularization of the biological system.

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Claim 75 (Currently Amended) The artificial implant system in biological contact with a biological system of claim 54 ~~37~~, wherein the ~~combination of the matrix material and~~ cellular component includes at least one member selected from the group consisting of ~~basement membrane and~~ normal vascular stem cells; ~~(basement membrane and cytokines bound to basement membrane) and~~ normal vascular stem cells; ~~basement membrane and~~ a combination of normal vascular stem cells and engineered support cells; ~~basement membrane and~~ a combination of normal vascular stem cells and engineered stem cells; ~~(basement membrane and cytokines bound to the basement membrane) and~~ normal vascular stem cells and engineered support cells; or ~~(basement membrane and cytokines bound to the basement membrane) and~~ normal vascular stem cells and engineered stem cells.

Claim 76 (New) The artificial implant system in biological contact with a biological system of claim 75, wherein the basement membrane has cytokines bound thereto.

Claim 77 (New) The artificial implant system in biological contact with a biological system of claim 37, wherein at least a portion of the cellular community is bound to the biological matrix.

Claim 78 (New) An implant system comprising an implantable device and a biological matrix comprising a basement membrane in contact with an outer surface of said implantable device, said biological matrix promoting biocompatibility between said implantable device and a biological system.